

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 December 2000 (14.12.2000)

PCT

(10) International Publication Number
WO 00/76010 A1

(51) International Patent Classification⁷: **H01L 51/20**

(21) International Application Number: **PCT/GB00/02143**

(22) International Filing Date: **2 June 2000 (02.06.2000)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
9912850.6 **2 June 1999 (02.06.1999)** **GB**

(71) Applicants (for all designated States except US): **SEIKO EPSON CORPORATION** [JP/JP]; 4-1, Nishishinjuku 2-chome, Shinjuku-ku, Tokyo 163-0811 (JP). **CAMBRIDGE DISPLAY TECHNOLOGY LTD** [GB/GB]; Greenwich House, Maddingley Rise, Maddingley Road, Cambridge CB3 0HJ (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SHIMODA, Tatsuya** [JP/JP]; Seiko Epson Corporation, 3-5,

Owa 3-chome, Suwa-shi, Nagano-ken 392-8502 (JP). **KOYAMA, Tomoko** [JP/JP]; Seiko Epson Corporation, 3-5, Owa 3-chome, Suwa-shi, Nagano-ken 392-8502 (JP). **KANEKO, Takeo** [JP/JP]; Seiko Epson Corporation, 3-5, Owa 3-chome, Suwa-shi, Nagano-ken 392-8502 (JP). **BURROUGHES, Jeremy, Henley** [GB/GB]; Cambridge Display Technology Ltd, Greenwich House, Maddingley Rise, Maddingley Road, Cambridge CB3 0HJ (GB).

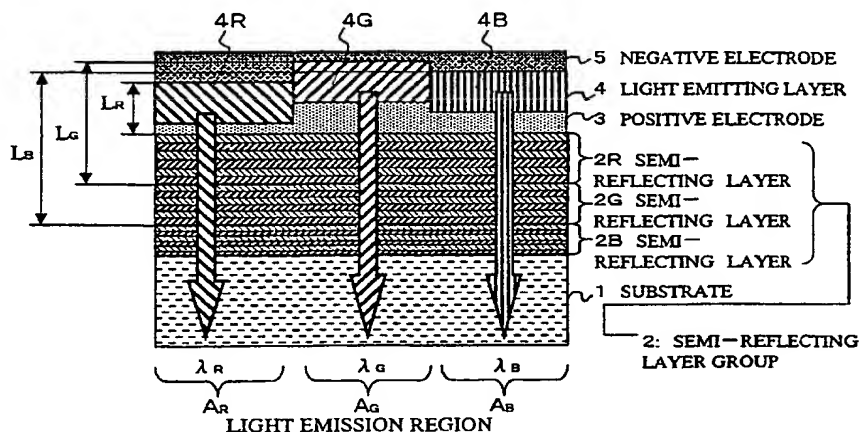
(74) Agent: **STURT, Clifford, Mark**; Miller Sturt Kenyon, 9 John Street, London WC1N 2ES (GB).

(81) Designated States (national): **AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW.**

(84) Designated States (regional): **ARIPO** patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), **Eurasian** patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), **European**

[Continued on next page]

(54) Title: **MULTIPLE WAVELENGTH LIGHT EMITTING DEVICE, ELECTRONIC APPARATUS, AND INTERFERENCE MIRROR**



(57) Abstract: A multiple wavelength light emitting device is provided wherewith the resonance strength and directivity between colors can be easily adjusted for balance. This light emitting device comprises a light emission means 4 for emitting light containing wavelength components to be output, and a semi-reflecting layer group 2 wherein semi-reflecting layers 2R, 2G, and 2B that transmit some light having specific wavelengths emitted from the light emission means and reflect the remainder are stacked up in order in the direction of light advance in association with wavelengths of light to be output. Light emission regions A_R , A_G , and A_B are determined in association with the wavelengths of light to be output. The configuration is such that, in the light emission regions, the distances L_R , L_G and L_B between a reflecting surface for light from the light emission means side of the semi-reflecting layers 2R, 2G, and 2B that reflect light output from those light emission regions and a point existing in an interval from the end of the light emitting layer on the semi-reflecting layer group side to the reflecting layer are adjusted so as to have an optical path length at which that light resonates.